

Foundations of Algebra

Compare and Order Numbers

What does it mean to compare numbers?

Many times, we compare two numbers in order to tell which number is bigger and which number is smaller.

* For example, suppose Jordie had 5 apples and Liam had 8 apples. A picture shows us who had more apples and who had less.



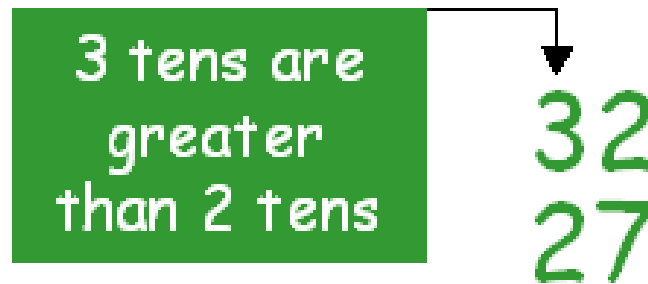
How do we compare numbers?

- The smaller the number is, the easier it is to compare. We can use a number line to help us with small single digit numbers.
- Is 6 bigger than 4? Is 2 smaller than 7? What about negative number?
- Try drawing a number line!

What if the numbers are bigger?

Comparing 2-digit numbers

When we compare 2-digit numbers we start by looking at the tens place.

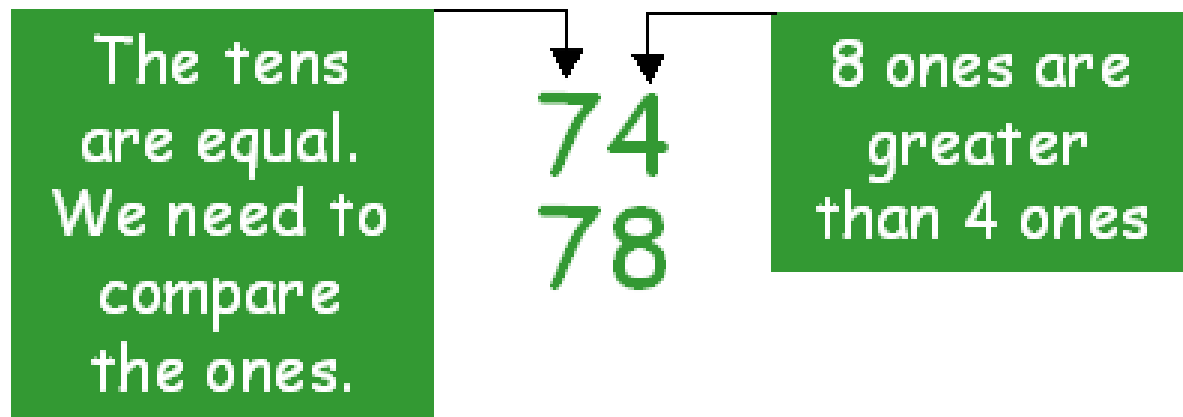


If the tens are greater for one number then that number will be greater.

- Is 45 smaller than 52?
- Is 32 larger than 26?
- Is 73 greater than 71?

What if the numbers are bigger?

What if the tens are the same?



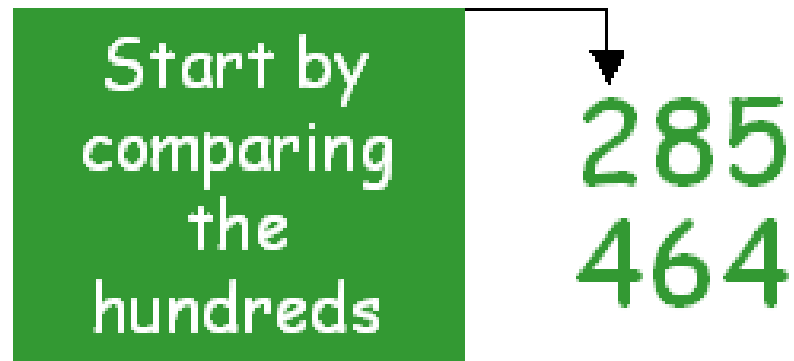
If the tens are the same we need to compare the ones. The number with more ones is greater.

- Is 82 greater than 81?
- Is 55 less than 53?

What if the numbers are bigger?

Comparing 3-digit numbers

Let's compare 285 and 463

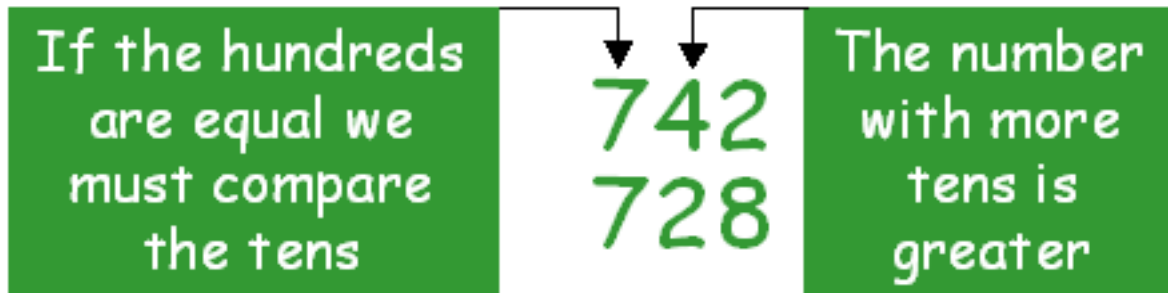


We start by comparing the hundreds. If one number has more hundreds then it is larger.

- Is 719 less than 729?
- Is 803 less than 603?

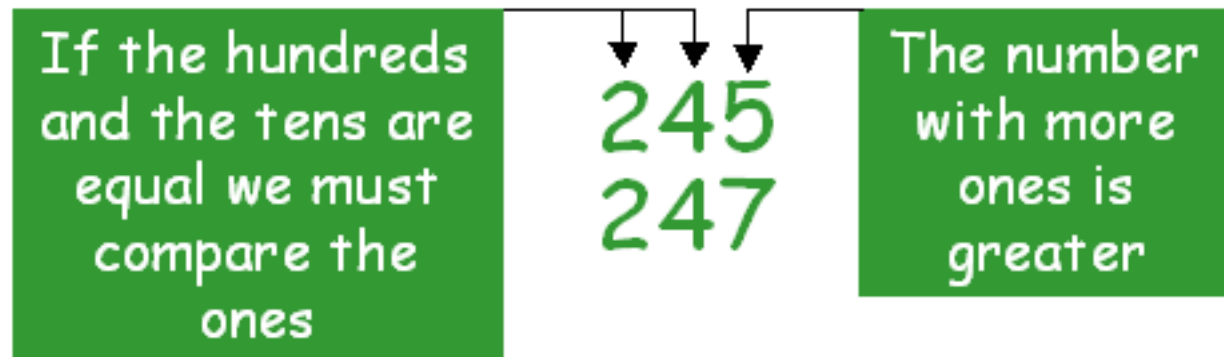
What if the numbers are bigger?

If the Hundreds are the same



$$742 > 728$$

If the Hundreds and the Tens are the same



$$247 > 245$$

Rules for Comparing Numbers

- The greater the **number of digits**, the greater the number is.
- If two numbers have the same number of digits, the number with **the bigger digit on the left hand side** is greater.
- If the leftmost digits are the same then we **compare the next digit to the right** and keep doing this until the numbers are different.

The Comparing Symbols

$>$ means **greater than**

$<$ means **less than**

$=$ means **equal to**

- We can often use symbols in Algebra to represent words, it's a shortcut!
- Can you think of any other math symbols we use?
- What other words could replace **greater than** or **less than**?

Practice

Compare the numbers. Write the correct sign, $>$, $<$, or $=$

1. 435 413

2. 820 940

3. 281 281

4. 100 64

5. 1,131 1,331

6. 589 587

7. 1,459 1,449

8. 2,687 2,842

9. 532 351

10. 10,462 10,651

11. 12,978 12,973

12. 1,904 1,094

Practice

Solve and compare. Write the correct sign, $>$, $<$, or $=$

13. $25 + 10$ $35 + 5$

14. $100 + 150$ $127 + 123$

15. $376 + 110$ $341 + 89$

16. $868 + 242$ $555 + 545$

17. $87 - 53$ $92 - 10$

18. $146 - 40$ $269 - 142$

19. $1,583 - 1,237$ $1,462 - 684$

20. $40 - 17$ $90 - 57$

Practice

Read and write the correct sign, $>$, $<$, or $=$

23. three hundred seven is three hundred eleven

24. one thousand five is one thousand five

25. one hundred fifty one hundred forty

Practice

Write the following numbers in order from the least to the greatest.

21. 693 104 598 683 _____

22. 38 1,498 676 929 _____

Write the following numbers in order from the greatest to the least.

21. 562 681 99 481 _____

22. 197 183 193 101 _____